COVER SHEET

Radio and New Media Technologies: Making Technological Change Socially Effective and Culturally Empowering

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This paper explores the role of new media technologies and radio in the field of Information and Communication Technologies (ICTs) for development. It investigates the possibilities inherent in linking radio with new and emerging ICTs, drawing upon ethnographic research conducted over the past three years. Radio is presented as an effective medium for development alongside new ICTs.

Introduction

Radio's history is long, and its presence in many people's lives across the globe ubiquitous, yet it is often overlooked. This is symptomatic of its "secondary medium" status, low profile, and lack of coordinated attention from academics until the recent establishment of the Radio Studies Network, and a series of international conferences beginning in 1999 with *Radiocracy*.[1]

Radiocracy and conferences such as the Melbourne 2005 Radio Conference have attracted academics, practitioners and policy makers from many countries, which also hints at the universal relevance of the medium and yet – as I have discussed elsewhere[2] – shows us how radio is different in different contexts and at different times. Participants of the Melbourne conference have clearly demonstrated this. In this paper I bring together research findings from two recent studies on ICTs and development. This is a field where again we see radio given less attention than it deserves, fading into the background as telecentres, computers and the Internet are seen as embodying significant development potential. "ICTs" implicitly references new information and communication technologies such as the Internet, while radio and other (often analogue) media are ignored. This is despite the potential of radio to offer cheap and effective communication channels in developing country contexts. In the "digital age" radio still has much to offer yet is under-utilised in many contexts. If it is accepted that better communication can help reduce poverty, then our understanding of ICTs needs to encompass all information and communication technologies, including radio.

Digital divide agendas overshadow the practical significance of inclusion in information and communication flows[3] that often do not depend on first-hand engagement with "new" technologies at all. In fact James argues for a "paragidgmatic shift" from a model that is based on the idea of telecentres equipped with computers, to an intermediary-based model that

provides internet access to local intermediaries who blend technologies (new and old) to distribute information and share knowledge.[4]

A recent review of work on the applications of ICTs to processes of human development identifies a series of "issues" and "gaps", key amongst them the lack of attention to integrated communication.[5] The tendency is to view new ICTs as separate from older ones while strategies and programmes that mix them hold more promise. There is insufficient incorporation of new ICTs with older communication technologies, such as radio. Skuse challenges donors to increase support for radio (especially at community and national levels) which provides many poor men, women and children with "*the* essential information lifeline"[6] and is a strategic tool of human development and poverty reduction.[7] Ramos and Díez demonstrate how, for remote indigenous populations in Mexico, radio can link with postal services, face to face communication, telephone and Internet to create "airwave mail" which, given the significance of migration to these populations, has "become an important tool for keeping culture alive outside its geographical boundaries".[8]

The two studies discussed here start from different research positions: one takes "poor", marginalised, low-income communities and investigates the role of ICTs in their lives – it starts from *communities* and looks at their access to and engagement with ICTs in everyday life. The other starts with ICT *interventions* and looks at how they work in and with low income, marginalised communities. What I want to pull out from the research is the continuing importance of radio within the ICT for development agendas – to show how in-depth research into emerging ICTs cannot avoid a consideration of radio.

In both studies, poverty is understood as a complex condition that involves issues of voice, empowerment, rights and opportunities as well as material deprivation. Moreover, even material deprivation is generally identified in ways that are specific to a location and a culture and it has to be understood in a wider context.[9]

Both studies used the conceptual framework of "communicative ecology" to organise ethnographic research and analysis: in each community the full range of available communicative resources and the social networks that assembled and used them in different ways were considered. Specific ICTs were not separated off either from other media or social contexts of use. For both research projects "ICTs" encompass a full range of information and communication technologies, which include radio, television, the press, physical notice boards, computers and the Internet. "Communicative ecology" refers to the complete range of communication media and information flows in a community. It places ICTs (radio, computers, mobile phones, print media and so on) in the context of all the ways of communicating that are important locally, including face-to-face interaction. It recognises that any emerging technologies emerge in an already existing communicative ecology that itself changes over time, and that any "new" connections and networks (social and technical) that develop as a result of ICT interventions and the introduction of individual media technologies

will be far more effective if they are interconnected with existing, locally appropriate systems and structures.

The origin of both studies can be found in another research project. In 2002 the United Kingdom government's Department for International Development (DFID) funded us to explore the usefulness of ethnography as a methodology to monitor and evaluate ICT for development initiatives. We took as our research site the Kothmale Community Radio and Internet Project (KCRIP) in Sri Lanka, and spent a month in the field with locally appointed research assistants and a local project manager. With this team of academics from the United Kingdom and Australia, and local research assistants and translators, we used some of the classic methods of ethnography – participant observation, in-depth interviews, short surveys – to carry out a "quick" ethnography of the Kothmale initiative. This happened at a time when there was great concern that money was going into ICT projects for development while there was little understanding of local "impacts" of the initiatives beyond the anecdotal, and concern that quantitative methods had failed to tell funders what they really wanted to know.

We found that ethnography was indeed a useful approach to understanding such ICT interventions; it gave us a level of understanding of the project previously unavailable. Amongst other things it told us that new technologies such as computers and the Internet offer important additions to the tools and information resources available to a community radio station and that in Kothmale there was a high degree of innovation and experimentation in their use and configurations, much of which is not apparent at first sight.[10] However, in terms of the approach that we took, we had two main problems. Firstly this kind of short-term ethnography never feels like it is finished. One of the features of ethnography is long-term engagement with the field site. Secondly, we gained good understandings and came up with recommendations for Kothmale – but they were never fully understood or "owned" by the project itself. In the light of these problems two research projects were developed, responding in different though complementary ways.

Information society: emergent technologies and development communities in the (global) south

The Information Society study was a two-year project funded by DFID in 2003. The project started with the premise that sustained qualitative research into the access and use of information and communication technologies (ICTs) by poor people is significantly absent in discussions of the digital divide, information inequality and poverty. The research sought to reveal the extent to which processes of electronic, mass-mediated and everyday social communication practice converge in distinct and localised communicative ecologies. The approach stressed the need for detailed local knowledge of location-specific configurations of ICTs and poverty, and for comparative analysis of differences and similarities between different development contexts. In response to the gap in qualitative knowledge relating to ICTs and development, and the need to generate more detailed accounts of the social, cultural

and political dynamics that constrain or facilitate ICT interventions, a team of researchers came together and established a research group (Information Society Research Group – see http://www.ISRG.info). Lead researchers took responsibility for research in the four countries chosen for the study, India, Ghana, South Africa and Jamaica. In each country, one urban and one rural research site was chosen. Within each country a field researcher was recruited to conduct ethnographic fieldwork for a year.

We have identified ICT opportunities and constraints in terms of how people actually understand, use and integrate different media in their communications and livelihood strategies and connected these findings to specific policy concerns by indicating, for example, how poor people and communities maintain social networks and manage remoteness, itself a key factor in chronic poverty. More broadly, the ethnographic approach allowed us to study the actual uses and understandings of media and communication with which development initiatives have to engage in order to be effective in specific contexts. Below I discuss some of the initial findings, with specific detail from the Indian component of the study. What is clear from the findings, and the approach that ensures a consideration of radio in the wider communicative ecologies of the sites studied, is that in order to really understand the use and relevance of any particular medium, it is necessary to understand how these media are embedded in everyday lives and the wider economic, political, social and cultural particularities of each context.

Indian research context

India has a population of over one billion, with 35 per cent of the population living on less than one dollar a day according to 1999-2000 census data. Poverty. We worked in two sites, a slum in Delhi and a village in Uttaranchal (previously part of Uttar Pradesh) in the north of India. In urban areas poverty can be associated with high density and inadequate housing, poor sanitation, the presence and spread of infectious diseases and the fear of eviction for slum dwellers. In rural areas the association is with lack of infrastructure such as roads, power, telecoms, good quality education and health services, limited employment opportunities and distance from urban and semi-urban markets and centres, which leads in turn to isolation.

The urban site *Kache Ghar*[11] is a high-density cluster of three slums all now long-established with families having lived there since 1975. It is a dense slum settlement in the heart of Delhi, initially squatted largely by migrant labourers from other parts of the country. The land at that time had no infrastructure or facilities, and these are still severely lacking. Squatting this land prior to 1998 entitled slum dwellers to a claim to relocation land under Government policies which aimed to relocate slum dwellers when the land owners decide to evict them. So, the decision to live in the slum was often seen as an investment in the future – a means to gain ownership of relocation land elsewhere. In the popular narrative, the slums are evoked as being “dirty”, “unsafe”, “sites for criminal activity”. There is no language to

articulate the presence of slums in the popular imagination besides one of alienation. Slum dwellers are, in many ways, "invisible citizens" of the city with limited rights and participation in mainstream culture.

The rural site is a multi-caste village, *Uncha Gaon*, consisting of thirty-five houses. Research encompassed the neighbouring small town of *Naya Sahar*, focusing especially on its market, its links and importance to the village. *Unchan Gaon* is eighty kilometres from the nearest city. The terrain is hilly and difficult to navigate. The village is one and a half kilometres from the nearest road and only accessible on foot along a steep, stone pathway. Many villages in the area are at far greater distances, taking twenty-four hours to reach on foot. Farming is the main activity in the village, and it is undertaken almost exclusively by women. Most households farm their land for their own consumption, a few sell crops to generate income, some households do not possess land, and some who own land do not have irrigation. Basic facilities are limited and there is a general lack of infrastructure in the area. While the village has an electricity supply, not all households have connections. Caste plays an important role in structuring formal and informal interactions and relationships with strict distinctions and separations maintained between the members of different castes.

The lack of flow of information and communication is a key constraint to opportunities in these sites, exacerbated by low income and by social and cultural manifestations of gender and caste. Vulnerability is caused by poverty generally, restricted mobility (social and spatial), restricted employment opportunities, the threat of ill health plus the uncertain future of slum dwellers due to their illegal status. While the urban site is essentially a space of in-migration from other states in India, the rural site suffers from out-migration to urban areas – in both cases the migration is driven by the search for employment and better livelihoods and both are accompanied by family separations. The lack of employment opportunities in the rural site results in families being separated for long periods whilst (mostly) men seek paid employment in urban centres, often far away and for long stretches of time. Communication with those who are away and those left behind is a major concern for people in both sites. Telephones play an important role in maintaining contact for many, although the lack of telephone ownership means this is less utilised than it could be, with public call offices playing an important role.

The most important existing ICT penetration in the urban site is in the form of radio, cable TV and public call offices. In the rural site radio is the most pervasive mass medium, with local TV cable operators in the nearby town starting to penetrate the villages, and public call offices available in the town.

Summary of initial findings

The most important communication technology across all four country studies in terms of facilitating a level of inclusion for poor and remote communities into regional, national and international economic flows, particularly in the form of remittances, is the telephone.

Increased access to telecommunications has allowed for the easier maintenance of existing networks and for new social networks to emerge – these are networks that are often built around extended kin relationships and patterns of regional, national and international economic migration (which has different characteristics in each site under study). In the Indian context the public call offices provide access to telephones for local people in both sites where phone ownership is very low.

Radio is ubiquitous in both sites. The urban site has access to several public and commercial radio stations. The only terrestrial radio station accessible in the village is a public (All India Radio) station. Since 2000, a local community radio group *Hevalvani Community Radio* has been operating intermittently in the rural area, "narrowcasting" locally made educational and awareness raising radio programs. The group visits villages and plays programs through cassette machines to groups of villagers. Community radio licenses are not yet legislated for in India, though progress is being made with the introduction of "community radio" licenses to educational establishments.

Computers and the Internet are not as yet having any real impact in the Indian study sites. While the areas surrounding the slum cluster have numerous Internet cafes, these are rarely if ever accessed by slum dwellers. There is one location within the slum that has Internet access – a school for alternative education. While access to computers in this school is excellent – with two well-equipped computer labs and an additional computer in each of the twenty-four classrooms – the use and understanding of the Internet is highly restricted. There is no Internet access in the village or the town; the village school does not have computers. Secondary schools in the vicinity do have computers – but no Internet connections. Computers there have been introduced as part of the school curriculum, though there were no trained teachers. Improved communication and information flows in both sites might be achieved by the establishment of public service or community programs or channels, and combining media – Internet-sourced information delivered through radio and radio delivered through the existing cable TV infrastructure (for which no licence is required) – would increase access to information. Local participation in such initiatives would improve media literacy and help to achieve a good mix of appropriate local information and entertainment and Internet-sourced educational and health information. For example, in the Indian sites, health and welfare is poor – access, followed by effective use of health services, is rare for a range of reasons. Levels of awareness about health and disease are very low and could be greatly improved through effective use of ICTs. ICTs – in particular the existing infrastructure provided by radio – could facilitate more efficient and integrated uses of existing social networks to spread health information more deeply into communities.

The civil society sector would be aided by greater integration of electronic media, particularly radio, improving the circulation of information and better coordination of activities. There are structures in place in both Indian sites that might facilitate this, but there exists a lack of awareness amongst residents about how they might best utilise them, or a

feeling of powerlessness. Self-help groups are prominent in the rural site where groups of women can gain some control over finances, as are NGOs (non-governmental organisations) that serve a range of agendas – the most effective in the vicinity of the village serves a broad agenda of awareness raising. Such NGO activities in the urban site were less visible or permanent. Civil society activities are hampered in the urban site and aided in the rural site by local governance structures. In both cases, improved circulation of information and better coordination of activities could be greatly aided by utilising ICTs, especially radio in the rural site and combinations of Internet, radio and cable TV in the urban site.

Most educational ICT use across the four countries studied was confined to conventional "computer literacy". We uncovered widespread popular belief that ICTs are part of everyone's future but found that this is understood very differently in different places. Furthermore, linking new technologies such as computers to actual futures in terms of employment or income generation was significantly absent amongst the poorest groups studied. More generally, there is a distinct lack of guidance and knowledge within education systems as to how computers and skills might be connected to future employment and livelihood strategies. Use of ICTs within informal education was more diverse across sites: In South Africa ICTs played a significant role in health, well-being and conflict reduction, while in Ghana radio played a central educational role, not matched by any other medium. In the rural site in India, radio offered the potential to play such a central role, but is currently limited in its effectiveness by legislation concerning community radio licensing.[12] Educational programmes on a range of issues like local governance, handicrafts and agriculture are distributed through the community radio project. This could be utilised more effectively by a range of NGOs if broadcast terrestrially.

Gender is one of the most difficult areas for generalisation across the four countries and in relation to ICTs. It is in the India study that access to ICTs is most clearly and strongly gendered. This reflects the general lack of autonomy and mobility (spatial and social) of women who also have limited employment/economic opportunities and heavy domestic workloads. Here newspapers are accessed and circulated through male dominated spaces such as tea shops. Cable television has a large take-up in the slums; however, women were not expected to watch TV unless their domestic chores had been completed and we witnessed one young wife being badly beaten in the street by her mother-in-law and husband for watching TV. Radio is generally heard in the slums as an omnipresent soundscape extending into the narrow lanes and densely packed homes. Film songs and cricket are the most commonly cited reasons for listening. The community radio initiative in the rural site is limited in effectiveness by the number of narrowcasts that can take place. However, women and men in equal measure turn out to hear the programs which would have a far greater reach if broadcast terrestrially or via a cable TV channel once the cable network has been extended.

ICT Innovations for Poverty Reduction (ictPR)

In mid 2002, UNESCO's Bureau for Communication and Information (Asia-Pacific) put out a call for organisations working in South Asia to submit proposals for innovative applications of ICTs for poverty reduction. UNESCO's aim was to support their work through the provision of ICTs and to research each of them in order to answer some basic questions about the usefulness of new technologies for development. Can ICTs help to reduce poverty, and if so, how? Nine local initiatives were supported and work began in late 2002-5 in India and one each in Bangladesh, Sri Lanka, Nepal and Bhutan. While they all have a different organisational structure, each has the involvement of at least one locally active NGO. Some were existing development projects that through this opportunity added ICT components, while others developed following UNESCO support. Each local initiative has a local researcher who has been trained in ethnographic action research.[13] This is a methodology that takes an ethnographic approach – through the use of methods such as participant observation, in-depth interviews and the writing of field notes – to action research, where research is fed into development of local initiatives. It is a methodology that combines research with project development. It has been designed particularly for ICT for development projects and is a direct result of our work in Kothmale and recognition that relevant research must be integrated into and owned by the projects it seeks to support.

A basic principle of ethnographic action research is that in order to understand the potential and real impacts of individual ICTs in any given situation, you need to place this experience within a broader understanding of the ways in which communication, access to and the use of information is structured in people's lives. Each instance of communication or information-use takes place within an already-existing communicative ecology. Using ethnographic methods, researchers working in each ICT project conduct research that tries to understand their project, and improve it, according to a good understanding of the wider contexts in which they work.

The research has proven important for individual project development and at the same time storing and discussing research data in a centralised location has given us the opportunity to compare and contrast research, and develop insights into the potential role of ICTs in poverty reduction. These insights are based on data from across the sites which use a range of media mixes, approaches, resources and organisational structures. Indeed, the implementation of the methodology has varied across projects, with some spending considerable time conducting research prior to the intervention, and others taking a far more action research approach, testing and adapting (experimenting) through the implementation of the project and project development methodology at the same time.

All of the initiatives combine and link social and technical resources in different ways, often in response to the knowledge and resources available to their organisation and in an attempt to respond to the needs of their target communities. They encompass a wide range of technical, social and organisational combinations that have allowed us to investigate some of

the different directions that community ICTs can take, as well as the ways in which different media and media mixes can be related to poverty reduction. All of the initiatives have access to computers, with each group securing Internet access. All have digital cameras, multifunction printers and digital pendrives, and in some cases webcams and microphones. These peripherals often played a very significant role in evolving media use. Other equipment suitable to the technical models was provided by UNESCO on a site by site basis, for example digital video cameras to Tansen and audio equipment to Namma Dhwani (see below).

To give a sense of the centres I will give just two examples here:

Namma Dhwani Local ICT Network (Budikote, Kolar District, Karnataka, India) combines a radio studio, an audio cable network that delivers radio to local households (via the cable TV network), and a telecentre with computers and other multimedia tools. It is run by and centred on a network of women's self-help groups (SHG) and linked to a local development resource centre. Daily community radio programming addresses local information and communication needs, drawing on productions by local volunteers as well as a variety of multimedia resources, such as websites and CD-ROMs. Having their own radio station has made a significant impact on Budikote's population, and the surrounding villages where they have some loud speaker broadcasts. While the bulk of programming consists of locally produced, pre-recorded shows, Namma Dhwani recently broadcast live coverage of local elections – the first time this had ever happened here. Placing a local reporter with a mobile phone at the vote counting centre in Bangarpet, the station called him every fifteen minutes for the latest updates.

Tansen Community Media Centre (Tansen, Palpa District, Nepal) works with local young people from poor families and traditionally marginalised caste groups, training them in audio-visual production and computers and Internet skills. The centre is made up of a digital production studio and a computer/Internet access centre and is linked to a local cable TV network. Youth participants' audio and audio-visual programming are aired on local media – the local cable TV network and local community radio stations. Training young people in ICT skills is envisioned as a route to empowering youth as agents of social change, and media content that explores social issues such as the environment and issues around caste has been made. Radio Lumbini, a community radio station close by, uses the format "radio browsing" in which a radio show is made on a topic that is researched through the Internet – sometimes in response to listener's requests for information. Presenters broadcast live, searching the Internet in response to listener's requests, translating information into local languages.

These two centres are good examples of combining new ICTs with traditional media. In both cases the idea of communicative ecologies has been an important factor in ensuring that researchers and other project workers situate their local understandings and uses of ICTs within existing technical and social networks and has influenced the types of services, training and programming produced.

Summary of key findings

Looking at the experience of centres across the network, it has emerged strongly that content creation itself is a powerful means of engaging people with media technologies and developing sophisticated ICT skills that has the added benefits of allowing them to voice their concerns and to acquire and share locally relevant knowledge. Of all the ICTs used, radio remains the easiest and cheapest technology for these kinds of enterprises.

Engagement with all the ICTs brought out innovation and creativity in users and communities both in content and in understandings of the media. It is important for initiatives to respond to and build on this energy, motivation and initiative (as is often explicitly demanded by participants) and to do so through flexibility in training and organisation, through securing the most enabling technical support possible and through sensitive and locally-specific research. By reflecting both on this innovation and on their research into local poverty processes, initiatives can also find creative and appropriate means to channel some of this activity into more directly poverty-targeted media content and use, but in ways that are appropriate to and that build upon participants' actual engagement with ICTs.

The sites have demonstrated a significant local capacity for expression, programming and production using a range of media. Mixed media approaches have clearly facilitated an increase in local users' media literacy and a greater capacity to express their ideas concerning a range of issues and ideas. In Tansen and Namma Dhwani, computers and the Internet are tools for program development as much as anything else. Linking information gained from the Internet to more traditional distribution channels is an effective way of utilising newer ICTs and their promise for development. Echoing James,[14] these centres act as intermediaries in situations where a straight telecentre model without the addition of traditional media would be far more limited in its impact. The mixed media model allows for greater participation in and more effective distribution of content around issues such as health, good governance, education and welfare more generally.

Initiatives employing new ICTs can build upon existing community media and multimedia models (particularly community radio and video) which have long traditions of community content development and participatory training and production. This can help shift computer and Internet use in the community from general purpose skills and information access to the production of locally relevant content, both through local management of information, and through incorporation of content into media and multimedia formats that are closer to the community. Integrating ICTs with established media like community radio also draws on the strong organisation and ownership models of community media, which has positive implications for the sustainability of local ICT initiatives. In many cases, through this process of integrating media, technologies and resources, we are seeing the potential emergence of local community knowledge organisations.

Conclusions

An ethnographic approach to ICTs takes us beyond the immediate contexts of access and use to a consideration of how these technologies and their various contents are embedded in everyday lives – how users, consumers and/or producers are "themselves imbricated in discursive universes, political situations, economic circumstances, national settings, historical moments, and transnational flows, to name only a few relevant contexts".[15] The notion of communicative ecology provides us with a conceptual framework for our comparative ethnographic study of the relationship between ICTs and issues around poverty – it focuses our attention on the communication-related aspects of the contexts in which the people we are studying operate, which nevertheless are in turn imbricated in other structural, social, economic and cultural contexts.

So, finally, to come to a conclusion that draws together the findings from the two research projects in one sentence that is of relevance to this conference on radio: Radio maintains a central role in ICTs for development, one that needs to be understood in the context of mixed-media environments, and through looking beyond media and information and communication technologies themselves and understanding how they work in larger communicative ecologies.

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[11] Local place names have been altered for anonymity.

[12] See Kanchan Kumar, "Mixed Signals: Radio Broadcasting Policy in India", in *Economic & Political Weekly* 38, no. 22 (2003), 2173-82.

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